1   <u>CLAIMS</u>

2

3   [001]   A method for controlling a three-phase direct-

4   current motor (11) wherein three first switching

5   states (a, c, e) are cyclically repeated, wherein

6   in each of the first three switching states one of

7   the three phases (U, V, W) of the direct-current

8   motor (M) is periodically switched over between a

9   first and a second input voltage (+, -) whereas the

10   two other phases are continuously connected to the

11   first input voltage (+).

12

13   [002]   The method according to claim 1, characterized in

14   that respectively one second switching state (b, d,

15   f) is inserted between two first switching states

16   (a, c, e), wherein one of the three phases (U, V,

17   W) is periodically switched over between the first

18   and the second input voltage (+, -) whereas the two

19   other phases are continuously connected to the

20   second input voltage (-).

21

22   [003]   The method according to claim 2, characterized in

23   that in every second switching state (b, d, f) that

24   phase is switched over which is periodically

25   switched over neither in the preceding nor in the

26   following first switching state (a, c, e).

27

28   [004]   The method according to claim 2 or claim 3,

29   characterized in that the fraction (α) of the time

30   in which the periodically switched-over phase is

31   connected to the second input voltage (-) from the

32   duration of each first switching state (a, c, e) is

33   equal to the fraction of the time in which the

34   periodically switched-over phase is connected to

the first input voltage (+) from the duration of
each second switching state (b, d, f).

[005]   The method according to any one of claims 2 to 4,
         characterized in that in each second switching
         state (b, d, f) the fraction (α) of the time in
         which the periodically switched-over phase is
         connected to the first input voltage (+) is
         regulated proportionally to the load of the direct-
         current motor (11).

[006]   The method according to any one of the preceding
         claims, characterized in that in each first
         switching state (a, c, e) the fraction of the time
         in which the periodically switched-over phase is
         connected to the second input voltage (-) is
         regulated proportionally to the load of the direct-
         current motor (11).

[007]   The method according to any one of the preceding
         claims, characterized in that an AC/DC inverter is
         used for controlling the direct-current motor (11),
         between each phase (U, V, W) of the motor (11) and
         a terminal carrying the first input voltage (+),
         respectively one first switch (SU1, SV1, SW1) of
         the AC/DC inverter is provided and between each
         phase (U, V, W) of the motor (11) and a terminal
         carrying the second input voltage (-), respectively
         one second switch (SU2, SV2, SW2) of the AC/DC
         inverter is provided and that in every first
         switching state (a, c, e), the first switch of the
         periodically switched-over phase remains open
         whilst the second switch of this phase is
         periodically switched over.

[008]   The method according to claim 7, characterised in
         that in every second switching state (b, d, f) the
         second switch of the periodically switched-over
         phase remains open whilst the first switch of this
         phase is periodically switched over.

[009]   An AC/DC inverter, characterised by a control
         circuit (C) for carrying out the method according
         to any one of the preceding claims.